Rift Valley fever decision support framework for eastern Africa

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Inter-regional conference on Rift Valley fever: new options for trade, prevention and control
Djibouti City, Djibouti
21-23 April 2015

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Background

- Rift Valley fever (RVF) occurs in irregular patterns, a challenge for decision-makers
  - Likelihood of an outbreak
  - Actions to take
- Impact study implemented after the 2006-07 outbreak:
  - The severity of the epidemic was exacerbated by delays in the recognition of risk factors and in taking decisions to prevent and control the disease

Impact study results

Mean intervals between key events in 2006-07 RVF outbreak, based on pastoralists' recall in North Eastern Province, Kenya

Events	Mean interval (days)	Average reported start date per event
Start of heavy rains and appearance of mosquito swarms	23.6	Start of heavy rains: mid-October 2006
First appearance of mosquito swarms and first suspected RVF case in livestock	16.8	Appearance of mosquito: late October 2006
First suspected RVF case in livestock and first suspected human case	17.5	First suspected RVF case in livestock: mid-November 2006
First suspected RVF case in livestock and first veterinary service response	61.7	First suspect RVF case in humans: late November 2006
First suspected RVF case in livestock and first public health service response	50.0	First veterinary service response: mid-January 2007
First suspected human case and first public health service response	30.0	First public health service response: mid-December 2006

Decision support framework (DSF)

- DSF developed to facilitate risk-based decision making:
  - ❑ Framework matches interventions with the level of RVF risk
  - ❑ The need to balance the need for information against the need for a timely response
  - ❑ Recognizes that information will be imperfect

- Status-quo
  - ❑ All-or-none decision making

DSF development stages – Phase I

- Stakeholder workshop –FAO/ILRI – March 2008
- Review in RVF conference convened by CDC - May 2008
  - Technical team (Sept 2008)
- Technical review via email - Version 2 developed (DST – DSF)

Initial version of DSF

Am. J. Trop. Med. Hyg., 83(Suppl 2), 2010, pp. 75–85
doi:10.4269/ajtmh.2010.83s2a03

Decision-Support Tool for Prevention and Control of Rift Valley Fever Epizootics in the Greater Horn of Africa

Consultative Group for RVF Decision Support*

Abstract: In East Africa, Rift Valley fever (RVF) usually occurs as explosive epizootics with prolonged inter-epidemic periods on the order of 8 to 10 years. The episodic nature of the disease and the rapid evolution of outbreaks create special challenges for its mitigation and control. Following the events of the 2006 and 2007 RVF outbreak in East Africa, decision-makers assembled their collective experiences in the form of a risk-based decision support tool to help guide responses in future emergencies. The premise of the tool is that a series of natural events are indicative of the increasing risk of an outbreak and that actions should be matched to this evolving risk profile. In this manner, investment in prevention and control can be qualitatively optimized. The decision support tool is a living document written through stakeholder input. This publication captures the current tool as an example of risk-based decision support.

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DSF development stages – Phase II

- Dubai workshop – AU-IBAR – June 2011
  - Introduced the framework as a tool for managing RVF at the regional level
  - Trade
- Naivasha workshop – climate change and decision making - September 2014
  - Revisions on decision points
- Public health interventions – Dar es Salaam - November 2014
  - Public health interventions

Decision points

1. Inter-epidemic period
2. Pre-outbreak
    i. Early warning – issued by Meteorology Departments
    ii. Alert phase
        - Localised/prolonged heavy rains reported by eye witnesses
        - Localised flooding
        - Localised mosquito swarms
3. Outbreak phase
    i. Suspected outbreak – first detection of cases in animals or humans
    ii. Confirmed outbreak –laboratory confirmation in livestock or humans
4. Recovery phase
    i. No new cases in livestock and humans
    ii. Post outbreak recovery and reflection
5. Inter-epidemic phase

Interventions

- Capacity building and training
- Communication, advocacy and public awareness
- National and regional coordination
- Early warning
- Surveillance
- Disease prevention
- Case management
- Regulation of trade and markets for livestock
- Resource mobilization
- Establishing or strengthening institutions and policies
- Research
- Risk, impact and climate change assessment

Structure of the DSF

Inter-epidemic period

Category	Activity	Human health	Animal health
Capacity	Risk assessment	Develop and maintain risk assessment capacity in national public health services, research and training institutions and available to be applied to RVF contingency planning and response RVF contingency plan should be reviewed and up-dated regularly	Develop and maintain risk assessment capacity in national public health services, research and training institutions and available to be applied to RVF contingency planning and response RVF contingency plan should be reviewed and up-dated regularly
	Laboratory diagnosis	Maintain capacity for confirmation of RVF	Training and re-training to update personnel on changing technological development in diagnostics for livestock using OIE-recognized standards for trade purposes and for national purposes (Respective DVS to decide based on the capacity.)

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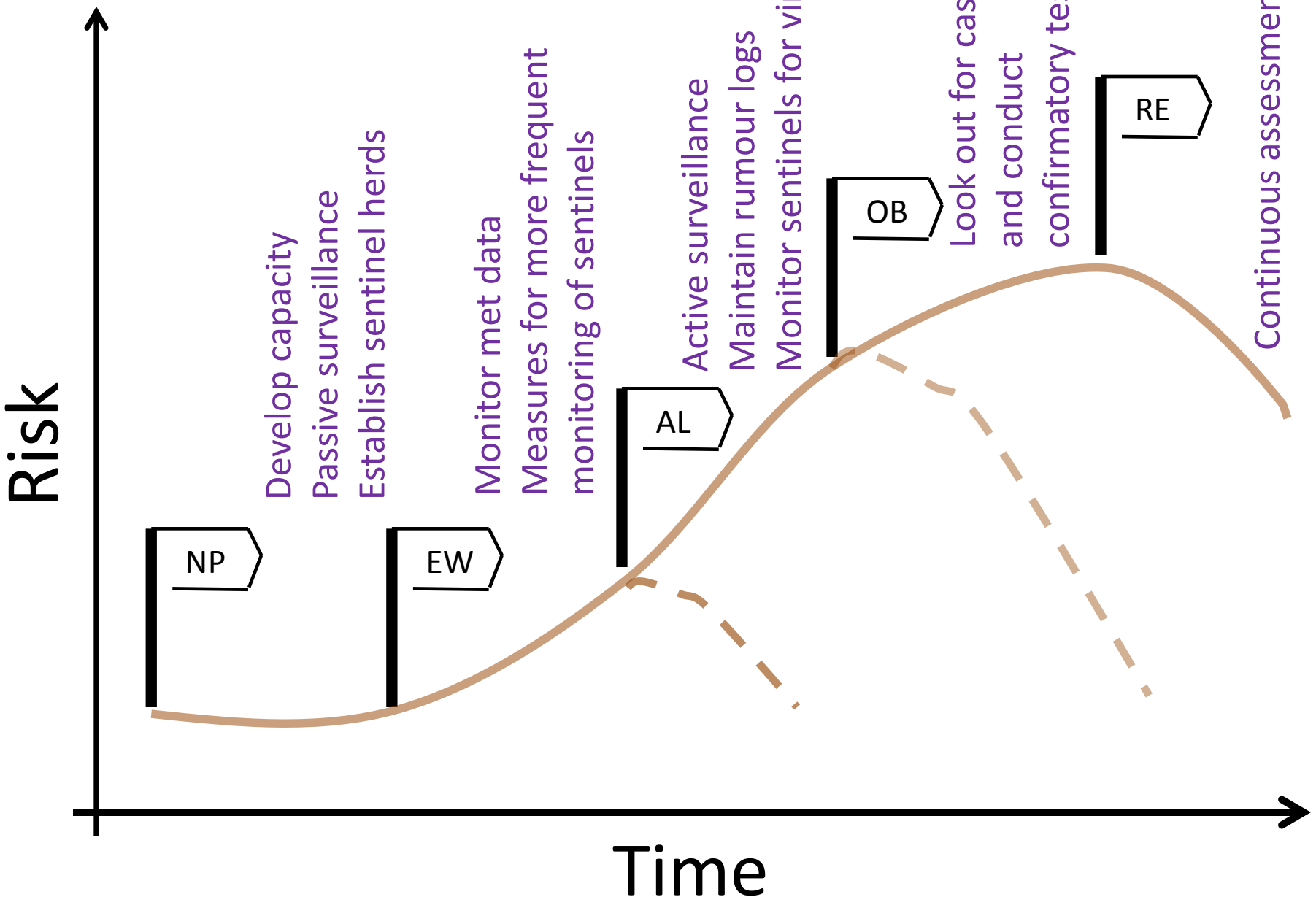
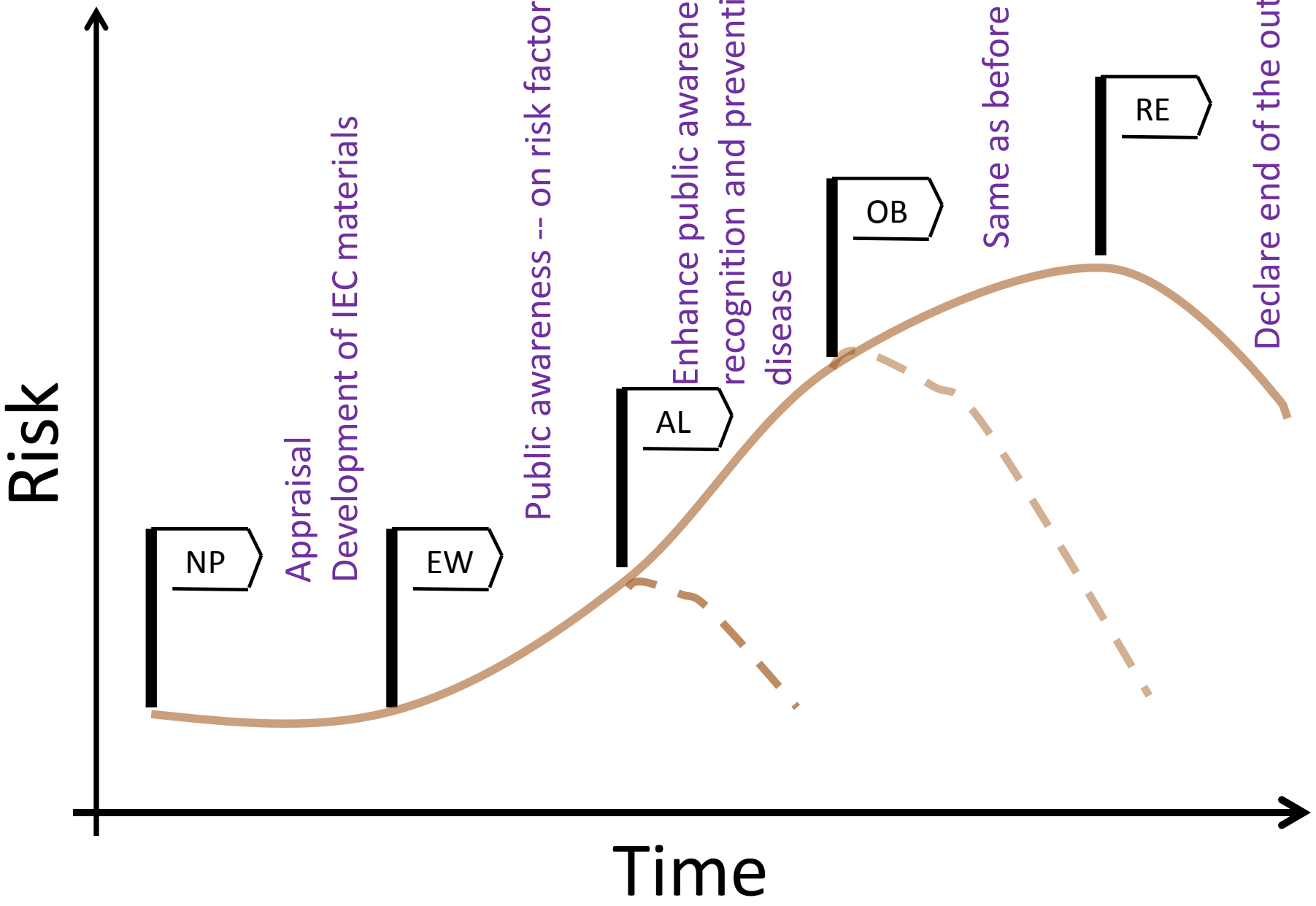
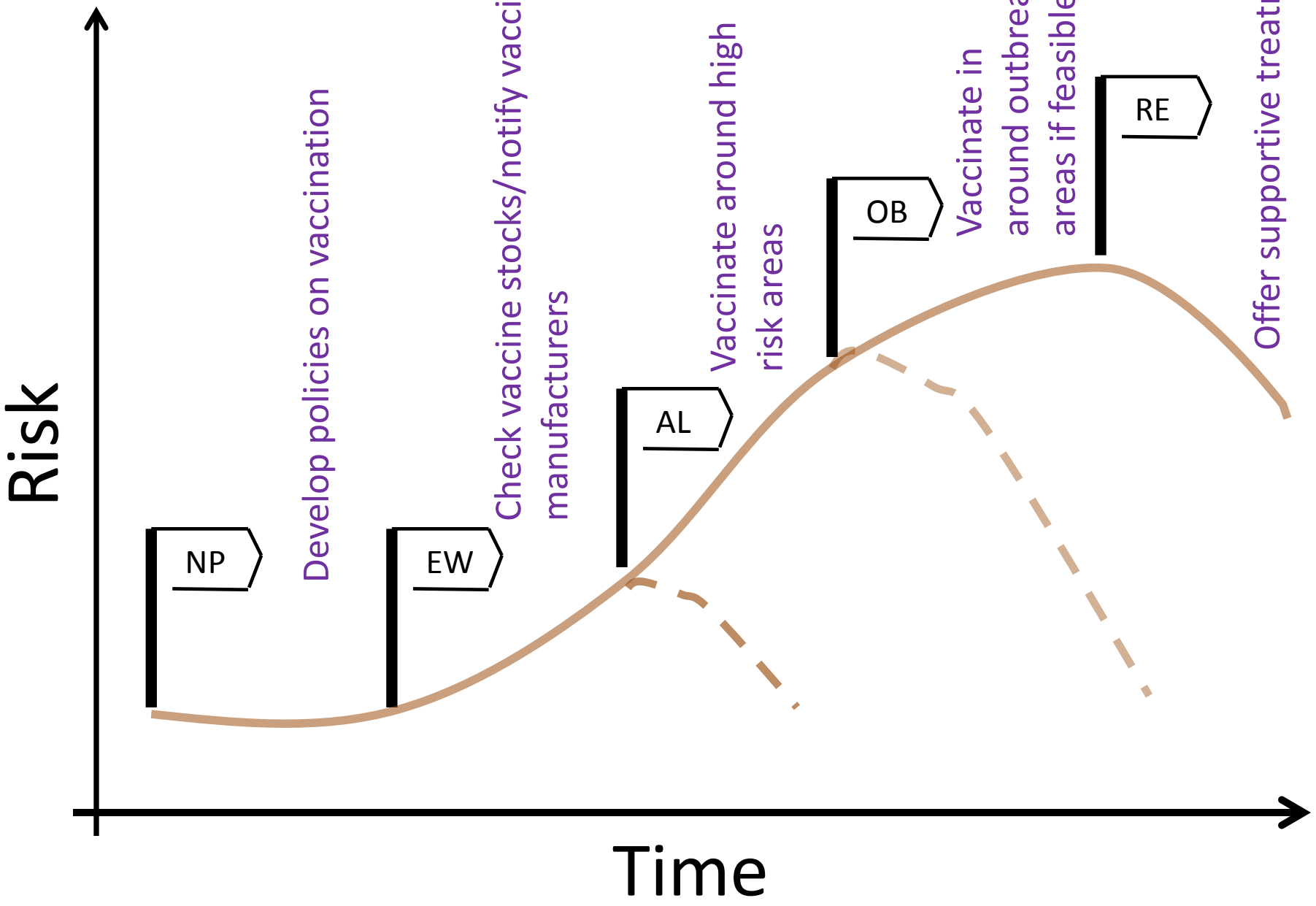
Surveillance



Communication



Vaccination



Assumptions of the DSF

- A national RVF emergency fund, and procedures for making it available, has been put in place
- A clear chain of command linking all the relevant departments and institutions
- The above requirements are captured in a government-approved contingency plan

Summary

- Risk-based decision making
- Refinements on the original DSF
  - the title from decision support tool to decision support framework
  - Decision points harmonised; reduced from 12 to 5
  - Incorporated public health measures to enable wider application based on the One Health paradigm

Acknowledgements

- Partners
- Funding agencies

Thank you!

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